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ABSTRACT

This document presents the texts of five addresses delivered at the Community College Association for Instruction and Technology (CCAIT) Spring 1976 Conference on Instructional Change. The keynote address, by Dr. Patricia Gill, points out the need for change in community college instructional delivery systems, describes some individualized programs and current research aimed at humanizing the teaching-learning process, and makes recommendations of developmental programs and change strategies. Other addresses include Dr. Norman Raiford's personal observations on team teaching; Dr. David S. Trask's comments on developing a definition of faculty development; Dr. Kent Sharples' description of individually-paced learning in engineering technology; and Dr. Jo Anne Craig's account of educational development at Greenville Technical College (South Carolina). Also included in this document are a complete agenda of the two days of conference activities, lists of the discussion leaders and conference registrants, a final report of conference activities, and a February 1976 Progress Report for Greenville Technical College. (NHH)

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**PROCEEDINGS OF THE
CCAIT SPRING CONFERENCE
ON INSTRUCTIONAL CHANGE
STRATEGIES**

GREENVILLE TECHNICAL COLLEGE

APRIL 30 - MAY 1, 1976

Edited by

**Jo Anne Craig
Conference Chairman**

JC 760297

PROCEEDINGS OF THE CCAIT CONFERENCE ON
INSTRUCTIONAL CHANGE STRATEGIES
Greenville Technical College, Greenville, South Carolina
April 30 - May 1, 1976

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Welcome

The Educational Development Team of Greenville Technical College welcomes you to the Community College Association for Instruction and Technology Spring Conference on Instructional Change Strategies.

the college

Greenville Technical College is continually growing as evidenced by increased enrollments and efforts to ensure quality instruction. Started in 1962 with an enrollment of 600, Greenville TEC now has an enrollment of 12,000 (including 5600 enrolled in associate degree and diploma programs) for the 1975-76 academic year. College officials attribute this growth to scheduling flexibility, geographic accessibility, low cost and high quality instruction. The philosophy that postsecondary education should be available to everyone is demonstrated by the lowest college tuition in the state, "open door" admissions, an expanded financial aid program, evening and weekend education, and comprehensive course offerings in technical, industrial, allied health, college transfer and continuing adult education programs.

A career-oriented institution, Greenville TEC keeps instruction relevant and flexible by incorporating the ideas of local industry, business and health care personnel into curriculum planning.

the project

H. E. W., through The Fund for The Improvement of Postsecondary Education, has provided Greenville TEC with an Educational Development Team. The activities of the team are:

- (1) Facilitating faculty in the development and improvement of instructional skills.
- (2) Assisting teachers in selection and statement of performance objectives.
- (3) Assisting with evaluation and measurement problems.
- (4) Assisting teachers in the design of multiple learning activities.
- (5) Assisting teachers in the design and development of instructional media.
- (6) Conducting instructional research
- (7) Producing a syllabus for every course at Greenville TEC which will include performance objectives, alternate learning strategies for each objective, instructional resources, and criterion test items for each objective.

To be placed on our mailing list, or to obtain further information regarding this project please contact:

Educational Development Team
Greenville Technical College
P. O. Box 5616, Station B
Greenville, South Carolina 29606

Friday activities

4:30 p.m.

Registration - South Carolina Room

6:00 p.m.

Hospitality (cashbar) - Furman Room

7:00 p.m.

Banquet - Green Room

Host: Dr. Thomas E. Barton, Jr., President, Greenville TEC

Speaker: Dr. Patricia Gill, Associate, Instructional
ACCTIon Center
"Goal Setting in Instructional Development
Programs"

Saturday Activities

8:30 a.m.	Registration - lobby	
	* Simulation and Gaming in the Classroom Dr. Ron Stadslev	Clemson Room
9:00 a.m.	Coffee Hour - Green Room	
9:45 a.m.	Concurrent Sessions until noon	
9:45 a.m.	<u>Topic</u> Educational Development Team Mr. David Titus	<u>Room</u> Green
	Team Teaching Dr. Norman Ratford	Furman
	Individually Paced Learning in Engineering Dr. Kent Sharpels Mr. James Smith Mr. Gregg Strasler	South Carolina
	Continuation of * Simulations and Gaming in the Classroom Dr. Ron Stadslev	Clemson
11:00 a.m.	The Consortium Approach: Instructional ACCTion Center Dr. Jack Hunter	Green
	Using Student Evaluations of Instruction Dr. Clifford Shisler	Furman
	Individually Paced Learning in Engineering Dr. Kent Sharpels Mr. James Smith Mr. Gregg Strasler	South Carolina
	Continuation of * Simulations and Gaming in the Classroom Dr. Ron Stadslev	Clemson
12:30 p.m.	Luncheon Evaluation	Green
2:00 p.m.	Concurrent Sessions	
	<u>Topic</u> Educational Development Team (R) Mr. David Titus	<u>Room</u> Green

Faculty Development: The Faculty Speak Out
Dr. David Trask

Furman

The Consortium Approach: Instructional
ACCTion Center (R)

South Carolina

* Completion of Simulations and Gaming
in the Classroom

Clemson

3:30 p.m.

Farewells
Limousine Service to the Airport

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COMMUNITY COLLEGE ASSOCIATION
FOR INSTRUCTION AND TECHNOLOGY

Keynote Speaker

Dr. Patricia Gill is an associate of the Instructional ACCTion Center which is based at Tri-County Technical College in South Carolina. She holds the Ed.D. from Nova University. Before coming to the ACCTion Center Dr. Gill served in a variety of positions at Hillsborough Community College in Florida.

INSTRUCTIONAL DEVELOPMENT AND CHANGE STRATEGY

SPEECH DELIVERED BY:

DR. PATRICIA GILL
ACTION ASSOCIATE

To:

COMMUNITY COLLEGE ASSOCIATION
FOR INSTRUCTION AND TECHNOLOGY
REGIONAL SPRING CONFERENCE

GREENVILLE, SC
APRIL 30, 1976

THE CHALLENGE OF K. PATRICIA CROSS IN HER BOOK BEYOND THE OPEN DOOR IS APPROPRIATE TO ALL OF US. SHE STATES THAT "ONCE COLLEGE FOREGO THE LUXURY OF SELECTING STUDENTS TO FIT THE COLLEGES, THEY THEN TAKE ON THE OBLIGATION OF DESIGNING THE COLLEGES TO FIT THE STUDENTS." MANY OF US ARE PRODUCTS OF COLLEGES WHICH SELECTED AND INTERVIEWED STUDENTS TO DECIDE WHOM THEY WOULD TAKE. SINCE TODAY'S 2-YEAR POST-SECONDARY SCHOOLS PROFESS AN "OPEN DOOR" PHILOSOPHY, WE ARE NOW OBLIGATED TO DESIGN OUR COLLEGES TO FIT THE STUDENTS. THIS INCLUDES SUPPORT SYSTEMS AS WELL AS CURRICULUM AND INSTRUCTIONAL MODES.

ORDAINED EDUCATIONAL PROCEDURES ARE PRACTICALLY IMMORTAL. ARISTOTLE WAS THE FIRST GREAT LECTURER, AND WE PRIMARILY USE HIS METHOD TODAY. LET ME GIVE YOU ONE EXAMPLE FROM THE BOOK DE-MANAGING AMERICA, THE FINAL REVOLUTION BY RICHARD CORNUELLE OF HOW HARD IT IS TO CHANGE THE MODE OF INSTRUCTION ONCE IT HAS BEEN ESTABLISHED. MR. CORNUELLE RELATES A STORY OF A TIME EARLY IN WORLD WAR II WHEN GERMANY WAS PREPARED TO FIGHT AND ENGLAND WAS NOT. THE BRITISH ARMY HASTENED TO COLLECT ANYTHING THAT WOULD SHOOT TO DEFEND THE ENGLISH COAST UNTIL MORE MODERN WEAPONS COULD BE BUILT. THEY FOUND A NUMBER OF OLD WORLD WAR I CANNONS AND PREPARED TO PUT THEM BACK INTO SERVICE. AS THEY REVIEWED THE MANUAL FOR FIRING THE WEAPONS, THEY LEARNED THAT AT ONE POINT IN THE PROCEDURE TWO MEMBERS OF THE GUN CREW SHOULD LEAVE THEIR PLACES, WALK A FEW PACES ASIDE, AND STAND AT ATTENTION. WHILE THIS MANEUVER LEFT THE INSTRUCTORS PUZZLED, THEY WERE RELUCTANT TO ABANDON THE PROCEDURE. THEN, AFTER A FEW WEEKS OF PRACTICE, THEY DECIDED TO DISTURB THE RETIREMENT OF AN OLD GUNNER AND BRING HIM TO THE TESTING GROUND TO REVIEW THE DRILL. AT THE POINT IN THE DRILL THAT THE TWO MEN DREW ASIDE AND STOOD AT ATTENTION, THE INSTRUCTORS QUESTIONED THE GUNNER - "WHAT ARE THEY DOING?" "VERY SIMPLE," THE OLD MAN REPLIED, "THEY'RE HOLDING THE HORSES."

WE IN EDUCATION MIGHT ASK OURSELVES THE SAME QUESTION. DO WE HAVE OUR STUDENTS HOLDING NON-EXISTANT HORSES? IF SO, WE MUST EXAMINE THE SYSTEM AND BEGIN IMMEDIATELY TO MAKE CHANGES. THESE CHANGES MUST BE DIRECTED AT UTILIZING THE UNIQUE TALENTS OF EACH INDIVIDUAL, AT PRESENTING LEARNING STRATEGIES AND CURRICULA APPROPRIATE TO THE COMMUNITY AND INDIVIDUALS IN THAT COMMUNITY.

A TELEVISION COMMERCIAL WHICH ENDS WITH "A MIND IS A TERRIBLE THING TO WASTE" ALWAYS MAKES ME STOP AND THINK. A SOCIETY THAT USES PEOPLE ONLY PARTIALLY OR JUST MAKES WORK FOR INDIVIDUALS IS UNPRODUCTIVE. A GOOD SOCIETY IS ONE THAT NOT ONLY PERMITS BUT WELCOMES THE FULL EXPRESSION OF ALL THE HUMAN QUALITIES OF THE PEOPLE WHO ARE PART OF IT, ONE IN WHICH ALL THE WILLING ENERGY OF ALL ITS MEMBERS CAN BE FULLY INVOLVED. A SOCIETY THAT FINDS A WAY TO INVOLVE EVERYBODY FULLY BECOMES SUPER PRODUCTIVE. (CROSS, 1975.) IT IS TO THE DEVELOPMENT OF HUMAN QUALITIES THAT THE COMMUNITY COLLEGE, UNIQUELY AMERICAN SYSTEM OF POST-SECONDARY EDUCATION, IS COMMITTED.

THIS CONCEPT OF INVOLVEMENT NOT ONLY APPLIES TO THE LEARNER BUT ALSO TO THE EDUCATIONAL INSTITUTION AND CAN BE OF GREAT VALUE TO US IF WE ALSO SEE OUR ROLES AS INSTRUCTIONAL CHANGE AGENTS, INVOLVING AN ENTIRE INSTITUTION IN EVALUATING ITS CURRENT ACADEMIC POLICIES AND LEARNING STRATEGIES AND ASSISTING IN IMPLEMENTING CHANGE WHERE CHANGE IS NEEDED.

BUT THE PRIMARY ELEMENT IS THE LEARNER. IF WE CAN IDENTIFY THE HUMAN QUALITIES OF INDIVIDUALS AND THEIR WILLING ENERGIES, WE CAN BEGIN TO BUILD POSITIVE SELF IMAGES, REDUCE ANXIETY LEVELS, AND INCREASE LEARNING. IN A RECENT STUDY, NOT YET PUBLISHED, OSCAR MINK UTILIZED STUDENTS IN TEXAS POST-SECONDARY INSTITUTIONS AND SHOWED THAT WHERE ANXIETY LEVELS WERE LOWERED AND SELF-IMAGE IMPROVED, STUDENT LEARNING INCREASED.

MANY OF THE TRADITIONAL WAYS WE TEACH STUDENTS ARE LOGICAL IF TEACHING IS VIEWED AS AN ENGINEERING PROBLEM. THESE METHODS MADE SENSE WHEN THEY ARE APPLIED TO ADDING INFORMATION TO THE MEMORY OF A COMPUTER. WE TRANSLATE THE

MESSAGE INTO A FORM WE KNOW A COMPUTER CAN COMPREHEND, TRANSMIT IT BY A METHOD WE KNOW WILL ALTER THE COMPUTER'S MEMORY, AND THEN TEST BY ASKING THE COMPUTER QUESTIONS TO BE SURE THE TRANSMISSION WAS TRULY RECORDED (TOFFLER 1970). THESE METHODS ARE NOT WORKING IN OUR "OPEN DOOR" INSTITUTIONS BECAUSE ONLY A FRACTION OF THE INDIVIDUALS HUMAN CAPACITY IS INVOLVED IN THE PROCESS.

AT THE AACJC CONFERENCE IN MARCH, THE U.S. COMMISSIONER OF EDUCATION, HONORABLE TERRELL H. BELL, DISCUSSED THE FOLLOWING TYPES OF EDUCATION:

INFORMAL: A LIFE LONG PROCESS OF GAINING EDUCATION THROUGH EXPERIENCE.

THIS FORM IS UNORGANIZED AND UNSYSTEMATIC (NEWSPAPERS, TV, BOOKS).

FORMAL: HIGHLY INSTITUTIONAL, CHRONICALLY GRADED, STRUCTURED.

NON-FORMAL: ORGANIZED, SYSTEMATIC, WHICH EXISTS OUTSIDE THE FORMAL EDUCATIONAL STRUCTURE SUCH AS ADULT EDUCATION, AGRICULTURE EXTENSION, YOUTH CLUBS, COMMUNITY PROGRAMS.

HE CHALLENGED EDUCATORS TO EXPAND THE SETTINGS WHERE EDUCATION IS OFFERED AND TAKE EDUCATION TO THE PEOPLE. HE QUOTED RECENT STATISTICS IMPORTANT TO EDUCATORS THAT SHOW A 50% REDUCTION IN UNEMPLOYMENT FOR THOSE WHO HAD ONE OR MORE YEARS OF POST-SECONDARY EDUCATION. 16% OF HIGHSCHOOL GRADUATES WERE UNEMPLOYED, WHEREAS ONLY 8% OF THOSE WHO ATTENDED POST-SECONDARY SCHOOL FOR ONE OR MORE YEARS WERE UNEMPLOYED.

WE AS INSTRUCTORS MAY MEET THE CHALLENGES OF DEVELOPING NEW LEARNING STRATEGIES AND OF EXPANDING EDUCATIONAL SETTINGS BY ACCEPTING THE RESPONSIBILITY FOR STUDENT LEARNING AND DEVELOPING DELIVERY SYSTEMS THAT PROVIDE ALTERNATE LEARNING MODES APPROPRIATE FOR EACH INDIVIDUAL, BY PROVIDING A CURRICULUM TO MEET THE NEEDS OF THOSE STUDENTS WHO PASS THROUGH OUR "OPEN DOORS" AND BY DEVELOPING AN ATTITUDE OF LIFE-LONG LEARNING IN THE MEMBERS OF THE COMMUNITY IN WHICH OUR INSTITUTION IS LOCATED.

MANY GOOD TEACHERS ARE ADAPTING THEIR DELIVERY SYSTEMS TO MEET STUDENT NEEDS. THEY ALSO TAKE INTO ACCOUNT THE NATURE OF THE SUBJECT AREA AND THEIR

OWN UNIQUE STRENGTHS. DR. WALTER HUNTER OF THE UNIVERSITY OF MISSOURI IN 1974 IDENTIFIED 726 PRACTITIONERS OF INDIVIDUALIZED EDUCATION. FOR THIS STUDY, HE USED TWO-YEAR POST-SECONDARY INSTITUTIONS LOCATED IN THE 19 STATE REGIONS OF THE NORTH CENTRAL COUNCIL OF COMMUNITY-JUNIOR COLLEGES. HIS STUDY FURTHER IDENTIFIED THE MODEL USED WITH EACH PROGRAM AND DISCOVERED THAT CERTAIN SUBJECT AREAS TEND TO LEND THEMSELVES MOST EASILY TO UTILIZING ONE MODEL. HOWEVER, THE DEPTH OF RESEARCH AND IDENTIFICATION OF SUCCESS USING A RESEARCH MODEL WAS NOT OF PRIME INTEREST TO THIS STUDY. PRIMARILY, HE WAS INTERESTED IN IDENTIFYING WHAT WORKED FOR INSTRUCTORS CONCERNED WITH HUMANIZING THE TEACHING-LEARNING PROCESS. WE CAN LEARN A GREAT DEAL FROM THIS STUDY, PRIMARILY THAT MUCH IS BEING DONE IN 2-YEAR POST-SECONDARY INSTITUTIONS IN THIS AREA OF INSTRUCTIONAL CHANGE, BUT LITTLE IS SHARED WITH OTHER TEACHERS. THIS IS PROBABLY TRUE OF YOUR OWN INSTITUTION. HAVE YOU RECENTLY POLLED YOUR FACULTY?

HAVING EXAMINED PUBLISHED REPORTS OF INNOVATIVE PROGRAMS, I WOULD LIKE TO SINGLE OUT TWO AREAS FOR PARTICULAR ATTENTION TONIGHT - COGNITIVE MAPPING AND DEVELOPMENTAL EDUCATION.

RESEARCH ON COGNITIVE STYLES IS AT LEAST 25 YEARS OLD. HOWEVER, ITS APPLICATION TO EDUCATION IS STILL IN THE EXPERIMENTAL STAGE. AN INSTITUTION UTILIZING COGNITIVE MAPPING STUDIES EACH STUDENT TO DETERMINE HOW HE PERCEIVES, REMEMBERS, THINKS, AND SOLVES PROBLEMS. WE KNOW, FOR EXAMPLE, THAT SOME LEARNERS PERCEIVE THE ELEMENTS IN A SITUATION, WHILE OTHERS PERCEIVE THE WHOLE. THE PROCESSING OF INFORMATION MAY BE METHODICAL AND ANALYTICAL FOR SOME, WHILE WITH OTHERS IT MAY BE INTUITIVE. THESE APPROACHES REMAIN RELATIVELY STABLE THROUGHOUT LIFE AND HAVE AN IMPACT ON LEARNING STYLES AND VOCATIONAL CHOICES.

TWO RESEARCH PROJECTS ON APPLYING COGNITIVE STYLES TO EDUCATION THAT HAVE BEEN UNDERWAY FOR A NUMBER OF YEARS ARE OAKLAND COMMUNITY COLLEGE'S PROJECT

UNDER THE DIRECTION OF DR. JOSEPH HILL AND THE FIELD DEPENDENCE/INDEPENDENCE MODEL BEING USED IN PROJECT PRIORITY, A PROJECT OF THE TWO-YEAR DEVELOPMENT CENTER AT THE STATE UNIVERSITY OF NEW YORK AT ALBANY AND TWENTY-THREE COOPERATING 2-YEAR POST-SECONDARY COLLEGES. IN BOTH THESE PROJECTS, IDENTIFICATION OF STYLE IS ONLY THE FIRST STEP. THIS INFORMATION IS UTILIZED TO PROVIDE ALTERNATE LEARNING STRATEGIES FOR EACH STUDENT, EMPHASIZING THE STRENGTHS OF EACH INDIVIDUAL AND EVENTUALLY TRYING TO OVERCOME WEAK AREAS THAT MAY AFFECT FURTHER LEARNING SITUATIONS.

WE MUST BE CAREFUL NOT TO OVERSIMPLIFY THESE RESEARCH PROJECTS. THE MOST IMPORTANT ASPECT OF COGNITIVE STYLE IS THE AWARENESS THAT TEACHERS AND LEARNERS HAVE DIFFERENT STYLES AND BEGIN TO UTILIZE THIS INFORMATION IN OUR EDUCATIONAL PROGRAMS BY PROVIDING ALTERNATE LEARNING METHODS APPROPRIATE TO THESE STYLES.

IT WOULD BE IDEAL IF WE COULD MATCH THE LEARNER AND TEACHER, UTILIZING THESE STYLES. HOWEVER, DUE TO THE SIZE OF MOST PROGRAMS IN OUR INSTITUTIONS, THIS IS NOT ALWAYS FEASIBLE. THEREFORE THE BURDEN IS ON THE TEACHER. IN THE SECOND AREA OF INVESTIGATION REMEDIAL EDUCATION AND DEVELOPMENTAL EDUCATION I FEEL THAT ANY INSTITUTION THAT CLAIMS TO BE STUDENT ORIENTED, INNOVATIVE AND TO EDUCATE THE LARGE NUMBER OF INDIVIDUALS, FOR WHOM EDUCATION HAS BEEN TO THIS POINT, A PAINFUL EXPERIENCE AND TO CREATE AN "OPEN DOOR" INSTEAD OF A REVOLVING DOOR, WE MUST EXPAND REMEDIAL PROGRAMS INTO DEVELOPMENTAL PROGRAMS.

REMEDIAL PROGRAMS HAVE TRADITIONALLY PROVIDED EXPOSURE TO ACADEMIC MATERIAL UNTIL THE NEW LEARNER IS PREPARED TO LEARN WHAT THE FACULTY IS PREPARED TO TEACH. WE PREPARE STUDENTS IN REMEDIAL PROGRAMS FOR COLLEGE AND THEN GO ABOUT OUR BUSINESS AS USUAL. WE FEEL THAT STUDENTS WITH GOOD GRADES WILL LEAD MORE SUCCESSFUL LIVES THAN THOSE STUDENTS WITH LOWER ACADEMIC STANDING. HOWEVER, RESEARCH IN THIS AREA HAS PROVED THAT THIS IS NOT THE CASE.

DEVELOPMENTAL PROGRAMS HOWEVER, USE A MULTI-DIMENSIONAL EDUCATIONAL APPROACH. THE UNITED STATES EMPLOYMENT SERVICE, AFTER YEARS OF RESEARCH, HAS DESCRIBED THREE MAJOR FUNCTIONS IN THE WORLD OF WORK: WORKING WITH DATA, WORKING WITH PEOPLE, AND WORKING WITH THINGS (CROSS, 1975). CAN WE NOT MEASURE THE ACHIEVEMENT OF STUDENTS UTILIZING THIS MULTI-DIMENSIONAL MODEL AND ABANDON OUR PURELY DIDACTIC MODEL? CAN WE DEVELOP OUR REMEDIAL PROGRAMS TO PROVIDE ADEQUATE KNOWLEDGE IN ALL AREAS, STRESSING THE STRENGTHS OF EACH INDIVIDUAL? ALL OF US HAVE WEAKNESSES AND NEED REMEDIATION. WE THEREFORE MUST STRESS STRENGTHS RATHER THAN WEAKNESSES IN OUR EDUCATIONAL PROGRAMS. WE MUST CORRECT WEAKNESSES SO THEY DO NOT BECOME HANDICAPS. HOWEVER, I CHALLENGE THE PROCESS OF IDENTIFYING THOSE STUDENTS WHO NEED REMEDIATION AND OF PLACING THEM IN ISOLATION FROM THE MAINSTREAM OF THE EDUCATIONAL PROCESS.

IF WE ADOPT THE CONCEPT OF LIFE-LONG LEARNING TOGETHER WITH THE PLURALISTIC MODEL FOR STUDENT ACHIEVEMENT, WE SEEM TO OPEN THE DOORS TO STUDENT SUCCESS IN AT LEAST ONE OF THESE IDENTIFIED AREAS.

THIS CONCEPT MAY LEAD YOU TO BELIEVE THAT I AM NOT AWARE OF ACCOUNTABILITY OR THE CHALLENGES TO QUALITY ACADEMIC EXCELLENCE. I AM NOT SUGGESTING THAT WE ABANDON EITHER CONCEPT. WHAT I AM SUGGESTING IS THAT WE REVIEW OUR INSTITUTIONAL GOALS, EXAMINE OUR RIGID CURRICULA, AND BEGIN TO MAKE CHANGES IF WE BELIEVE IN HUMANIZING THE TEACHING-LEARNING PROCESS. WE MUST FULLY UTILIZE THE CONCEPT OF LIFE-LONG LEARNING.

THUS FAR I HAVE POINTED OUT THE NEEDS OF CHANGE IN 2-YEAR POST-SECONDARY INSTRUCTIONAL DELIVERY SYSTEMS. I HAVE DRAWN YOUR ATTENTION TO SOME INDIVIDUALIZED PROGRAMS AND CURRENT RESEARCH AIMED AT HUMANIZING THE TEACHING-LEARNING PROCESS. THE QUESTION NOW IS, "WHAT IS YOUR ROLE IN THIS PROCESS?" THE ANSWER TO THIS QUESTION IS NOT SIMPLE. INFORMATION REGARDING YOUR POSITION IN THE INSTITUTION, THE ADMINISTRATIVE STRUCTURE OF THE INSTITUTION, AND OF PRIMARY IMPORTANCE THE CHARACTERISTICS OF THE FACULTY MUST BE EXAMINED TO DETERMINE YOUR ROLE.

IN MY POSITION AS A DEPARTMENT CHAIRPERSON, AS WELL AS WITH THE ACTION PROJECT, MY ATTEMPTS TO ASSIST FACULTY TO EXAMINE THEIR INSTRUCTIONAL DELIVERY SYSTEMS HAVE PROVED MOST EFFECTIVE WHEN I HAVE FOUND A MODEL WITHIN THE INSTITUTION, CONVINCED FACULTY TO ACCEPT NEW IDEAS, AND ALLOWED OTHER FACULTY TO INTRODUCE INNOVATION. THE FACULTY DEVELOPING NEW INSTRUCTIONAL MODES MUST BE SUPPORTED AND ENCOURAGED. ON EVERY FACULTY YOU WILL FIND AT LEAST A SMALL GROUP OF INDIVIDUALS WHO HAVE REACHED A POINT IN THEIR PROFESSIONAL CAREER WHERE THEY ARE LOOKING FOR METHODS TO ADOPT RATIONAL CHANGES IN THEIR INSTRUCTIONAL STRATEGY. BEGIN WITH THESE INDIVIDUALS. ENCOURAGE AND SUPPORT THEIR IDEAS. THEIR SUCCESS WILL PRODUCE A CHAIN REACTION. IF THIS NUCLEUS HAS ALREADY BEEN ESTABLISHED, THEY MUST BE MATURED - WALTER HUNTER IDENTIFIES IN HIS RESEARCH THAT THE MOTIVATIONS OF FACULTY TO CHANGE COMES FROM PERSONAL INTEREST, ADMINISTRATIVE INFLUENCE, AND CONTACT WITH OTHER INNOVATORS.

PHILOSOPHICALLY, WE BELIEVE THAT EACH PERSON IS ABSOLUTELY UNIQUE, IR-REPLACEABLE. BUT IN OUR MANAGEMENT OF INSTITUTIONS, WE TREAT PEOPLE AS INTER-CHANGEABLE AND COMPLAIN WHEN THEY DO NOT ACT THAT WAY. THEREFORE, TO IMPLEMENT INSTRUCTIONAL CHANGE, WE MUST ALSO EXAMINE THE INSTITUTIONAL PHILOSOPHY AS IDENTIFIED IN OUR CATALOG AND AS VOICED BY THE FACULTY AND ADMINISTRATION; THE CURRICULUM DEVELOPED BY THE INSTITUTION, AND THE SUPPORT SERVICES, PARTICULARLY COUNSELING AND LEARNING RESOURCES CENTER.

IN DEVELOPING THE KIND OF EDUCATIONAL PROGRAMS, I AM SUGGESTING WE MUST INCREASE OUR USE OF INSTRUCTIONAL TECHNOLOGY. YOUR JOB, AS I SEE IT, IS TO DEVELOP THE STRATEGY REQUIRED TO EDUCATE STUDENTS, FACULTY AND ADMINISTRATION TO UTILIZE CURRENT EDUCATIONAL TECHNOLOGY, WHILE AT THE SAME TIME TO DEVISE A FLEXIBLE FRAMEWORK TO ADAPT TO THE STRENGTHS OF INDIVIDUAL FACULTY MEMBERS.

CHANGE CANNOT TAKE PLACE WITHOUT TRUST AND UNDERSTANDING OF HUMAN RELATIONS AND INTERPERSONAL RELATIONS THAT EXIST IN EACH AREA OF YOUR INSTITUTION. TO EMPHASIZE THIS FACT, I WANT TO SHOW YOU A SHORT 6 MINUTE FILM. THIS FILM WILL ILLUSTRATE THE UNIQUE ROLE TO BE PLAYED BY THOSE IN THE AREA OF CURRICULUM AND INNOVATION. YOU MUST COMMUNICATE, CONVINCE PEOPLE THAT THEY SHOULD NOT BE INTIMIDATED BY CHANGE, AND ABOVE ALL SUPPORT EACH OTHER.

IN CONCLUSION, IT IS SAFE TO SAY THAT THE EDUCATIONAL SYSTEMS OF TOMORROW CANNOT BE THE SAME AS TODAY. JOHN GARDNER STATES THAT THE PIECES OF THE EDUCATIONAL REVOLUTION ARE LYING AROUND UNASSEMBLED - IT IS UP TO YOU.

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COMMUNITY COLLEGE ASSOCIATION
FOR INSTRUCTION AND TECHNOLOGY

Concurrent Session, May 1

Team Teaching: Some Observations From Personal Experience

Dr. Norman Raiford, Dr. Keller Freeman, and Mrs. Sue Inman were the participants in a team teaching program at Greenville Technical College, South Carolina. Dr. Raiford served as coordinator of the program. Dr. Raiford holds the doctor of philosophy degree in history from the University of Virginia.

"Team Teaching: Some Observations From Personal Experience"

By

Norman G. Raiford, Ph.D.
Instructor, Greenville Technical College

My most enriching experience in six years of teaching occurred this past fall quarter when, for the first time, I participated in team teaching. Having been warned by colleagues that team teaching was much like modern marriage -- involving lots of give and take, adjusting to your mate's personality and experiencing ups and downs -- I volunteered for the arrangement with some fears and hesitations. I even inquired beforehand of my department head if "divorce" were possible, and if so, how painful it would be. My fears were unfounded as it turned out, and for me at least, team teaching became an enjoyable and, I think, a most effective means of causing learning in students.

Feeling that students should gain as broad a perspective as possible of history, two colleagues and I combined our talents to present an interdisciplinary approach to Western Civilization. Dr. Keller Freeman's expertise lay in philosophy and intellectual history and in the fine arts. Mrs. Sue Inman's forte was literature. My contribution was in the area of politics, society, and economics. Together we unfolded for students as many sides of history as possible within our individual and collective limitations -- two by means of lecturing, one by leading discussion, and all of us by directing field trips. The results was the most academic and, at the same time, the most "three dimensional" course most of our students had ever taken at Greenville Technical College.

At the end of the quarter the team concluded that the multi-teacher approach possessed decided advantages, advantages for students, for teachers, and for the administration. First was the advantage of having a variety of

views and opinions presented to students. Students benefited greatly by witnessing instructors corroborating as well as disagreeing with one another's views. (No disagreements became violent or turned into fisticuffs, I might add). Second was the advantage of having a variety of expertise in the classroom at all times. Although two instructors' training lay primarily in history, their specialties were distantly removed. Thus, team members tended to complement and supplement one another.

The third and perhaps most significant advantage, one which redounded primarily to the benefit of the instructors, was the promotion of interaction and cooperation. The two conditions have been all too often absent in the teaching profession. Other than for the occasional pleasantries shared in passing or in meeting at the coffee urn, we teachers have tended to go our separate ways -- an impossibility with successful team teaching just as with a successful marriage to return to the earlier analogy. Our Western Civ team had to be in constant contact either holding conferences or actually attending each other's classes. We shared with one another and we learned from one another.

We also concluded that for successful team teaching there are a number of "musts." There must be compatibility in abundance -- again as in state of matrimony. Fortunately that was the case in this instance. Had the team not had compatible personalities and compatible professional attitudes, the course would have been disastrous for all concerned. There must also be organization. Only with complete planning in advance can a team taught course be successful. Each instructor must know in advance what is expected of him or her, at what time, and under what conditions. Thus, many problems are avoided by thorough advance planning and consultation.

The third "must" is time, and again, in abundance. Team teaching is hard work, harder than individual teaching. There must be time for all the normal requirements of teaching plus additional time for the constant conferences among team members. Also, ideally instructors should have the time to sit in on each other's lectures and discussions or to conduct a sort of "open classroom" procedure. Knowing first-

hand what fellow team members have taught eliminates much potential for confusion on the part of students.

Finally, for successful team teaching to occur, there must be a cooperative, enlightened attitude on the part of administrators. Administrators are fond of addressing themselves to "quality education." But if quality education is to be anything more than a polite euphemism, administrators must support instructors with fair working conditions. And for team teaching that means released time for the many responsibilities of promoting a well organized, well directed course. Fortunately, my own team teaching experience was pleasant, and I believe the team's effort led to improved instruction which did more than give mere lip service to "quality education." Personally, I am convinced of the value of team teaching given the above stated conditions, and I plan to continue being part of a teaching team as long as circumstances permit.

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The above is a summary of a presentation made to the CCAIT Eastern Conference on Strategies for Instructional Change, April 30 - May 1, 1976 at Greenville Technical College.

COMMUNITY COLLEGE ASSOCIATION
FOR INSTRUCTION AND TECHNOLOGY

Concurrent Session, May 1

Comments on a Definition of Faculty Development

Dr. David Trask chaired a discussion of faculty development. The remarks used to begin the discussion follow. Two faculty members from Greenville TEC were on the panel also.

Dr. Trask, holder of the doctor of philosophy degree in history from the University of Nebraska, is chairman of the Division of Arts and Sciences and directs the College Transfer Program at Greenville TEC.

COMMENTS ON A DEFINITION OF FACULTY DEVELOPMENT

David S. Trask

A good definition of faculty development is offered by Jerry Gaff in his recent (1975) book, TOWARD FACULTY RENEWAL. He defines faculty development as "enhancing the talents, expanding the interests, improving the competence, and otherwise facilitating the professional and personal growth of faculty members, particularly in their roles as instructors." (p. 14)

This definition underscores the general goals of faculty development while suggesting some of the problems of implementing such a program. The key difference between current faculty development programs and earlier college administration attitudes toward "professional growth" lies in the word "facilitate."

Traditionally colleges took a passive role in this matter. Faculty were free to pursue their own goals while "facilitation" was limited to research grants and sabbaticals. Monitoring of these activities occurred when the individual became eligible for tenure. The expected emphasis of these activities was on subject matter rather than on more effective methods of presenting material to students.

In community colleges today the passive role of administrators has largely ceased. Now community colleges establish philosophical commitments to certain approaches to teaching and learning and then work to bring the faculty into line with these approaches. The emphasis is on classroom performance; much of what was earlier defined as "scholarly activity" is either not rewarded or is actively discouraged. At the same time the in-class activities of teachers are frequently monitored by evaluations, teachers are encouraged to try out new approaches to instruction, bad teaching practices may be singled out for elimination. In short the relationship between teachers and administrators is altered. This need not be a negative development. At

its best faculty development programs can enhance all phases of the college environment. But if it is handled badly the implementation of a faculty development program can meet with a strongly negative response or at least passive resistance during which the instructor plays the game of growth externally while changing not at all internally. For that reason awareness of faculty attitudes is crucial and these attitudes should be considered before a program is implemented.

COMMUNITY COLLEGE ASSOCIATION
FOR INSTRUCTION AND TECHNOLOGY

Concurrent Session, May 1

Individually-Paced Learning in Engineering Technology

Dr. Kent Sharples coordinated a three year project for the National Science Foundation and the South Carolina State Board for Technical and Comprehensive Education. The project has focused on the Civil Engineering Technology Programs.

INDIVIDUALLY-PACED LEARNING IN ENGINEERING TECHNOLOGY

**D. Kent Sharples, Project Director
James D. Smith, Jr., Associate Director
Gregg M. Strasler, Research Associate**

**STATE BOARD FOR TECHNICAL AND COMPREHENSIVE EDUCATION
COLUMBIA, SOUTH CAROLINA**

Presented At:

**Community College Association For Instruction And Technology
Eastern Conference On Strategies For Instructional Change
Greenville, South Carolina
April 30 - May 1, 1976**

INTRODUCTION

In 1972, the South Carolina General Assembly passed Act 1268 which created the State Board for Technical and Comprehensive Education. The newly created State Board replaced the existing State Advisory Committee for Technical Training and was given jurisdiction over all two-year, state supported, post-secondary institutions and programs except for the University of South Carolina and Clemson branch campuses. During its formative years as an advisory committee and following its elevation to Board status, the system grew to its present total of sixteen technical colleges and centers (see Figure 1). Under the supervision of local area commissions and the guidance of the State Board, these institutions provide a comprehensive state-wide educational system (TEC). The underlying theme for the development of TEC has been its commitment to train highly qualified technicians to meet the needs of new and expanding industry.

Over the years, TEC has become a strong leader in technical education offering the advantage of a built-in consortium with an aggressive State Board providing leadership to the sixteen institutions as they in turn provide valuable technical training for the people of South Carolina.

Typical of the developmental leadership the State Board provides for the system is the state-wide curriculum development project in Civil Engineering Technology. In 1973, the State Board, through its Division of Educational Services, received a National Science Foundation grant to develop an individually-paced instructional format for the state-wide Civil Engineering Technology curriculum in South Carolina. The grant was funded for thirty-nine months and is administered through the Foundation's Science and Engineering Technician Education Program.

The project was designed to accomplish three basic objectives:

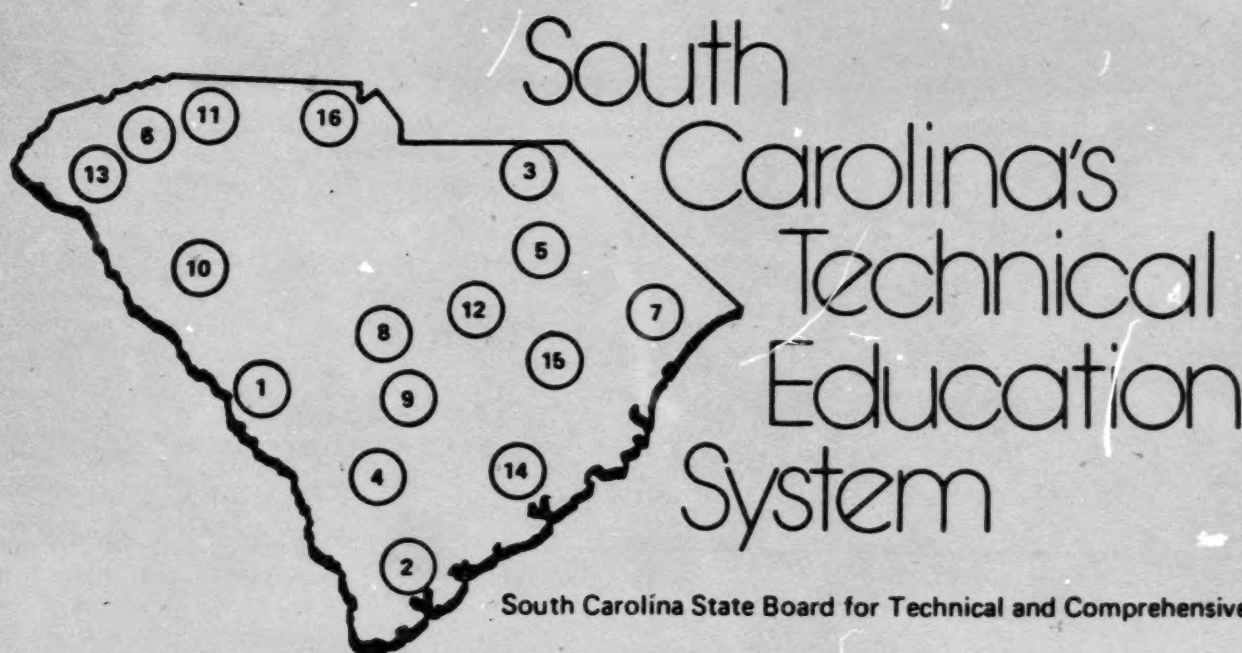
1. to identify the specific competencies required of a civil engineering technician,
2. to develop an individualized, self-pacing instructional format complete with software and equipment, and
3. to test and validate all items being developed.

The ultimate goal of the project is to develop a learner-oriented, open-entry/open-ended instructional format which relies heavily on the uses of audiovisuals and hands-on experience.

SIGNIFICANCE AND SCOPE OF THE ORIGINAL PROPOSAL

The original project, as funded by NSF, addresses itself to several educational problems of national concern, specifically student recruitment, attrition, and the problem of dealing with varying student ability levels within a given course curriculum. The concept of the individually-paced curriculum in this project is directly aimed at the alleviation of such problem areas.

It is hypothesized that the need to seek out and recruit interested students will be aided by an individually-paced curriculum which would enable a student to enter the program at any point during the year even though the introductory courses might not normally be scheduled at the time he wishes to enter. Furthermore, the inherent flexibility of the individually-paced curriculum is particularly valuable in enticing working students and others who may need to make special time arrangements not possible under traditional education programs.



TECHNICAL EDUCATION

- | | | |
|---|--|---|
| <p>1 Aiken Technical Education Center
Post Office Drawer 696
Aiken, South Carolina 29801
Phone 893-9231</p> <p>2 Beaufort Technical Education Center
100 S. Ribaut Road
Beaufort, South Carolina 29902
Phone 524-3380</p> <p>3 Chesterfield-Marlboro
Technical College
Drawer 928
Charter, South Carolina 29520
Phone 537-6286</p> <p>4 Denmark Technical Education Center
Denmark, South Carolina 29042
Phone 793-3301</p> <p>5 Florence-Darlington
Technical College
Post Office Box 8000
Florence, South Carolina 29501
Phone 682-8181</p> <p>6 Greenville Technical College
Post Office Box 5616, Station 8
Greenville, South Carolina 29608
Phone 242-3170</p> | <p>7 Harry-Garrettown
Technical Education Center
Post Office Box 710
Conway, South Carolina 29526
Phone 347-3186</p> <p>8 Midlands Technical College
Airport Campus
West Columbia, South Carolina 29169
Phone 796-8401

Beltline Campus
316 Beltline Boulevard
Columbia, South Carolina 29205
Phone 782-5471</p> <p>9 Orangeburg-Calhoun
Technical College
Post Office Drawer 1767
Orangeburg, South Carolina 29115
Phone 536-0311</p> <p>10 Piedmont Technical College
Drawer 1208
Greenwood, South Carolina 29646
Phone 223-8357</p> <p>11 Spartanburg Technical College
Post Office Drawer 4386
Spartanburg, South Carolina 29301
Phone 576-5770</p> | <p>12 Sumter Area Technical College
506 Guignard Drive
Sumter, South Carolina 29150
Phone 773-9371</p> <p>13 Tri-County Technical College
Post Office Box 87
Pendleton, South Carolina 29670
Phone 225-2250</p> <p>14 Trident Technical College
North Campus
7000 Rivers Avenue
North Charleston, South Carolina 29406
Phone 563-2375

Palmer Campus
125 Bull Street
Charleston, South Carolina 29401
Phone 722-0631</p> <p>15 Williamsburg Technical, Adult
and Vocational Education Center
P.O. Box 640
Kingstree, South Carolina 29556
Phone 354-7423</p> <p>16 York Technical College
U.S. Highway By-Pass 21-A
Rock Hill, South Carolina 29730
Phone 326-3843</p> |
|---|--|---|

Figure 1. Location of South Carolina's sixteen technical education colleges and centers.

Another hypothesis of this project is that the diversity and resultant enthusiasm generated by a creatively engineered, individually-paced curriculum will attack the problem of student attrition more efficaciously than the traditional teacher-oriented approach. A student using an individually-paced packet of learning materials is made aware of the objective and the necessity of each unit being studied and is thereby involved in the total learning process rather than simply being the recipient of it. The "hands-on" experiences aimed for in this project can transform theory into reality for the work-oriented student. The diversity of the learning techniques utilized within the self-paced curriculum is directed at the creation and retention of student interest in the various subject areas being covered. Should a student fail to meet necessary course objectives, the individually-paced concept gives him a viable alternative to dropping out of the program by enabling him to repeat courses or segments of courses without suffering the loss of time which usually accompanies the repetition of a course.

It is further hypothesized that the individually-paced curriculum will positively affect the students' level of success by recognizing and allowing for their individual abilities within any given area. Under this concept, a student can be met at his present level of proficiency, and progress from that point at his own rate.

Furthermore, not all students learn best by listening and reading. The instructional format implemented under this student-oriented strategy is designed to provide a multi-media approach to learning in an attempt to successfully reach students with varying degrees of verbal skills.

An adequately developed individually-paced program should allow students to independently choose, initiate, and follow through a specific learning technique on a given subject, thus allowing the instructor to serve, not as the traditional disseminator of knowledge, but rather as a resource expert in the field who is able to give individual attention when needed.

ORGANIZATION AND ADMINISTRATION

The project was staffed with a Director in March of 1973. Soon after, the faculty in the ten institutions which offer the Civil Engineering Technology (CET) program were organized to form a nucleus of course content experts.

An Associate Director was employed in June of the same year to coordinate the development of audiovisual materials. Preliminary meetings of the organized faculty unit resulted in agreement on the courses that would constitute the core curriculum in Civil Engineering Technology.

The courses included in the core curriculum and adopted as target areas for the project are:

1. Statics
2. Strength of Materials
3. Structural Concrete
4. Structural Steel
5. Surveying I
6. Surveying II
7. Cost Estimating
8. Highway Design and Construction
9. Hydraulics
10. Water and Sewerage Systems
11. Soil Mechanics

DEFINING COMPETENCIES

When a consensus had been reached by the faculty members concerning the specific courses to be developed, the project staff set about determining the core content of each course. To accomplish this objective, a series of meetings was held with the faculty committee. In preparation for these meetings, each school was asked, through their civil engineering Department Heads, to submit their existing course objectives. These objectives were reproduced and complete sets were returned to all CET faculty members so that each instructor was aware of other programs within the consortium. During subsequent faculty meetings, each instructor participated in the process of identifying those objectives which should be consistent among all ten schools. The end result of this series of meetings was a comprehensive task analysis of the core curriculum which resulted in a collective list of 163 competencies for the eleven courses in the CET program.

The next task was to verify that the 163 competencies identified by the consortium faculty were consistent with the needs of potential employers throughout the state. A second round of meetings was organized between representatives of faculty and industry. Although time consuming, these meetings provided a valid and realistic list of competencies required of a civil engineering technician.

SELECTING A FORMAT

By June of 1973, the preliminary task analysis had been completed and a format for writing the instructional material for each course needed to be selected. Since most of the available texts relating to the project's areas of concentration are written for the student seeking a baccalaureate degree, it was decided that the instructional units must be self-contained with little or no reliance on existing texts. It was also decided that the instructional units should be based on the concept of mastery learning with heavy emphasis on hands-on experience. After a careful analysis of our needs and the available predetermined methods for preparing self-instructional materials, the techniques developed by Drs. Stuart and Rita Johnson, Chapel Hill, North Carolina, were selected. Basically, their system is designed around a self-instructional book that has been written to guide an instructor through the process of producing and testing a small self-instructional unit or package. This book, entitled *Assuring Learning with Self-Instructional Packages or Up the Up Staircase*¹, was the focal point of a workshop for the faculty organized in June 1973, to:

1. introduce or reemphasize the concept of mastery learning to all the faculty,
2. identify the strongest supporters of the project, and
3. identify potential writers for the project.

With the list of identified competencies, an acceptable writing format, and the faculty involved and familiar with the project, we were ready to begin writing.

¹Johnson, Stuart R. and Rita B., *Assuring Learning with Self-Instructional Packages or Up the Up Staircase* (Reading, Mass: Addison-Wesley Publishing Co., 1973).

SELECTING THE WRITING STAFF

Since the development of the materials would necessitate a thorough knowledge of the entire spectrum of the civil engineering curriculum, it was decided that the writing could best be accomplished by subcontracting several course content specialists. A major decision concerning the method of writing dealt with the problem of whether to contract the writing to highly trained content specialists outside the system, or to use exclusively the pool of system-wide instructors with their more general backgrounds and experiences. Content specialists offered the advantage of more developed writing skills combined with a knowledge of the most current technical information. The faculty members, on the other hand, were familiar with the capabilities of the students for which the material would be prepared. Additionally, instructors at each institution, through continued close contact with their preestablished local industrial committees, could evaluate instructional content according to the needs of industry.

The results of the first workshop showed that approximately seventy-five percent of the faculty members were extremely interested in the project and eager to participate in the writing. Because of the high percentage of willing faculty participants and their understanding of the student population as well as local industrial needs, it was decided that faculty members should be the principal authors of the Civil Engineering Technology curriculum with the University of South Carolina faculty serving as consultants. This approach offered the advantages of both groups. It provided the project with material prepared for technology students by technology instructors and edited and proofread by highly trained specialists. Occasionally, this approach was somewhat more time consuming than anticipated since portions of the original material required substantial revisions. However, it did provide a method for maintaining accountable instructional materials, and consequently, it was well worth whatever additional time was required.

DEVELOPING THE WRITTEN MATERIALS²

A key project strategy for the development of instructional material is to maintain a degree of flexibility that will allow rapid movement to compensate for needed talent on a short-term basis. For example, the approach selected for this project has been to maintain a small core of full-time professionals at the State Board to administer and coordinate the material development and to supplement the authors' efforts with consultants and part-time employees. This arrangement has been successful since there are specific talents required to write each course. Hiring supplemental help as needed allows the Project Director to design a staff around the characteristics of the course and its author.

Generally, the part-time help that has been required falls into one of the areas listed below:

1. artist/cartoonist
2. technical illustrator
3. technical editor
4. script writer

² Figure 2 depicts the basic developmental steps taken for each course.

	SURVEYING I	SURVEYING II	STATICS	HIGHWAY DESIGN	COST ESTIMATING	STRENGTH OF MATERIALS	STRUCTURAL STEEL	REINFORCED CONCRETE	SOIL MECHANICS	HYDRAULICS	WATER AND SEWERAGE
CONCENSUS ON COURSE CONTENT											
CONTRACT WRITER											
COURSE OBJECTIVES DEVELOPED											
STAFF REVIEW OF OBJECTIVES											
REVIEW BY INDUSTRIAL REPRESENTATIVES											
WRITTEN MATERIAL IS DEVELOPED											
STAFF REVIEW AND EDIT											
BASIC ILLUSTRATIONS ARE INCORPORATED											
REVIEWED BY REVIEW COMMITTEE											
STAFF INCORPORATES REVIEW COMMITTEE											
COMMENTS AND EDITS											
TYPED FOR WALK-THROUGH											
ADD PHOTOGRAPHS AND OTHER ILLUSTRATIONS											
PROOFREAD											
ARRANGE FOR WALK-THROUGH--CLASS OF 6-10											
CONDUCT WALK-THROUGH											
EVALUATION BY STAFF, STUDENTS AND FACULTY											
IDENTIFY PROBLEM AREAS											
DEVELOP NEEDED SUPPORTING MEDIA IF REQUIRED											
REVISE WRITTEN MATERIAL IF NEEDED											
COORDINATE WRITTEN MATERIAL AND MEDIA											
PRINT FOR FIELD TEST											
FIELD TEST COMPLETE WITH SUPPORTING MEDIA											
	PHASES I & II 27 MO.						PHASE III 12 MO.				

Figure 2 - Itemization of the developmental steps taken for each course.

All individuals employed under these circumstances are contracted and compensated on a per unit produced basis. In all cases, remuneration is made only upon successful completion of the objective and acceptance of the work by the Project Director.

The first step in the development of the written materials was to conduct an evaluation of interested TEC faculty members to determine the most qualified person to write the material for each subject area.

A detailed contract was signed with each author as the writing of instructional material for the competencies associated with each course was assigned. The contract outlined the specific procedures and deadlines each author must follow in submitting his work. There were also quality requirements with built-in checks to guarantee the highest quality of work possible from each author. The contract also included procedures to follow in case either party wished to withdraw from the contract for reasons of unresolved disagreements or inability to complete the work. Thus far, this portion of the contract has been used only twice. In both cases, the problem was easily and satisfactorily resolved since both parties understood the procedure before entering into the contract.

Under the provisions of the contract, the author's first duty is to develop a list of objectives from the existing competencies for his content area. These objectives are scrutinized by the project staff and the instructors from participating institutions. When complete, each objective then becomes the theme around which an instructional module is developed.

Before a rough draft of each module is accepted, it is reviewed by the project staff and a select group of institutional faculty. At this stage of development the review is conducted to determine the accuracy of the content and the appropriateness of the sequencing. No attempt is made at this point to judge the module's classroom effectiveness. Each author is obligated to conduct one revision, if required, as part of his contractual obligation.

EVALUATION OF THE WRITTEN MATERIALS

As the written material for each course is completed, the long process of validation by field test begins. Each module is first scrutinized by a consultant from the University of South Carolina who is an expert in that particular area. The purpose of this edit is to utilize the writing skills of highly trained experts to rewrite or reorganize any weak points in the module.

The next step involves identifying an instructor and a group of students to participate in the field testing of each module.

Although conducted under less than ideal conditions, the project's main concern with field testing is to attempt to validate self-instructional material in a conventional classroom setting which provides the opportunity for thorough observation of student reaction to each module.

When possible, the project staff monitors the class and records the questions and comments of all students as they progress through the modules. When a project staff member cannot attend a "walk-through" class, the instructor is asked to record the necessary information on a form. Although using instructors to record student reactions expedites this phase of evaluation, it has proven to be less informative than the reactionary data obtained by project staff members who, unhindered by the individual problems which must be handled in a class of ten to fifteen students, are free to direct their entire efforts to the evaluation process.

The results of this phase of the development process are extremely helpful in the revision of problem areas within the modules. A careful analysis of student comments provides insight into

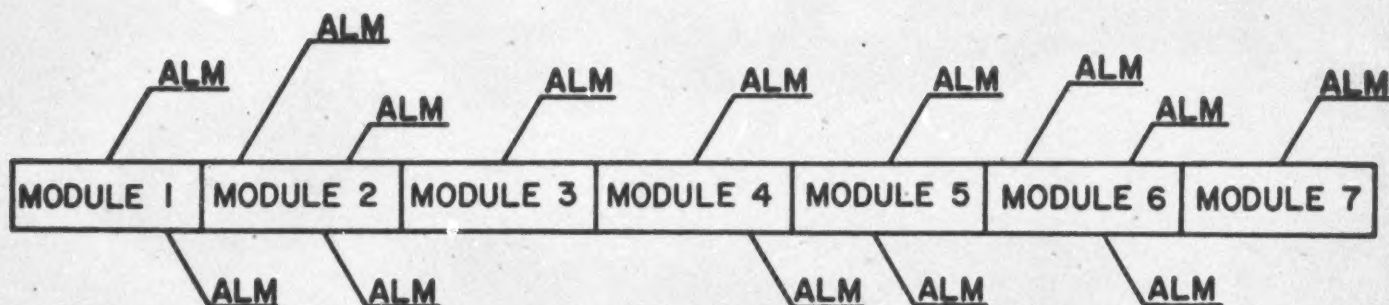
those areas in the module which confuse or are misunderstood by the students. These problem areas are closely examined by the project staff to determine if the written material lacks adequate instructions or is improperly sequenced, and if required, the module or parts of it are edited for a second time. If the problem module is ascertained to be well written and content valid, the difficulty encountered by the students will generally lie in the complexity of the concept or in the method of presentation.

For example, some concepts within the module could be rewritten in greater detail thereby helping those students who have difficulty understanding the material. However, addition of more material frequently makes that portion of the module too long and boring for the majority of students who have no difficulty understanding the information in its original form. In these cases, alternate forms of instruction are required to support the printed modules. For example, there are instances encountered during walk-through analysis where a larger number of visuals than is practical to include in the written module would help illustrate a difficult concept.

MEDIA DEVELOPMENT

Although the grant makes specific reference to heavy reliance on multi-media, the position taken by the Project Director has been to allow the instructional effectiveness and the cost determine the medium to be used. If, for example, a concept can effectively be learned through the medium of printed material, the most inexpensive form of media, then it is difficult to justify spending large sums of money to develop the same concept in a more expensive format.

The basic format for each course is a combination of written modules that form a linear progression through a series of related objectives. The linear progression of written material is broadened by a series of alternate media developed for points of difficulty as identified by the analysis of the walk-through results. As illustrated in Figure 3, these alternate media forms provide a branching effect for the student who has difficulty understanding the concept in its more condensed version in the module.



ALM = ALTERNATE LEARNING METHOD

Figure 3. The use of alternate media forms to supplement written modules.

Each supplemental presentation takes a part of the module, usually a single task or concept, and expands the information in great detail, thereby offering the student an alternate learning method. It is, however, possible for a student who encounters no difficulty working through the module to complete a module or modules without utilizing any of the supplemental film presentations. It is also possible that the results of the walk-through may show that no additional support material is required.

As the results of the walk-through began to show evidence of needed supplemental material, the project staff began examining alternate media forms that could be utilized. At this point in the development, the only decision that had been made was to shift from the written format used for the modules to a non-reading visual format. The criteria of effectiveness and cost were again used to evaluate visual formats such as 35mm slides, super eight and video tape.

Two issues associated with learning effectiveness had to be resolved:

1. advantages of still frame vs. motion, and
2. advantages of color vs. black and white.

Four issues relating to cost had to be resolved before a final decision could be made:

1. cost of production and reproduction of media presentations,
2. cost and ease of making revisions and corrections,
3. quantity and type of audiovisual equipment existing in the ten participating institutions, and
4. type of hardware necessary to implement presentations.

Resolution of these questions resulted in the conclusion that 35mm color slides were the most efficient and least expensive of the commonly available formats. Except for limited occasions, still frame is just effective as motion and the cost of 35mm slides is considerably less than super eight or video tape. Also, since there has been research supporting the concept of learning through the use of color, it was decided that the additional expense for color slides could be justified. The 35mm slides also offered the advantage of lower reproduction costs.

Another significant factor that influenced the decision was the ease with which slide-tape shows could be revised. This advantage was considered valuable since it is the intention of the project staff to develop flexible, easily edited materials that are free of the built-in limitations inherent in hard-bound, expensive texts and films.

Finally, an analysis of existing hardware in the ten participating institutions and the purchase price of new equipment also supported the adaptation of 35mm sound-slide format.

Once the medium had been selected, the format for the presentations could be developed. It was decided that to be consistent with the philosophy of mastery learning, the student must have the prerogative of reviewing the material presented. Therefore, the sound-slide presentations would be developed in the same cyclical style as the modules. As illustrated in Figure 4, information would be introduced, a question would be asked to reinforce the information, and immediate feedback would be provided. If a student missed a practice problem, he would be instructed to back-up

several frames for a review. This technique provides a cyclical effect to an otherwise linear program. The addition of the media presentation made a complete instructional program for each course.

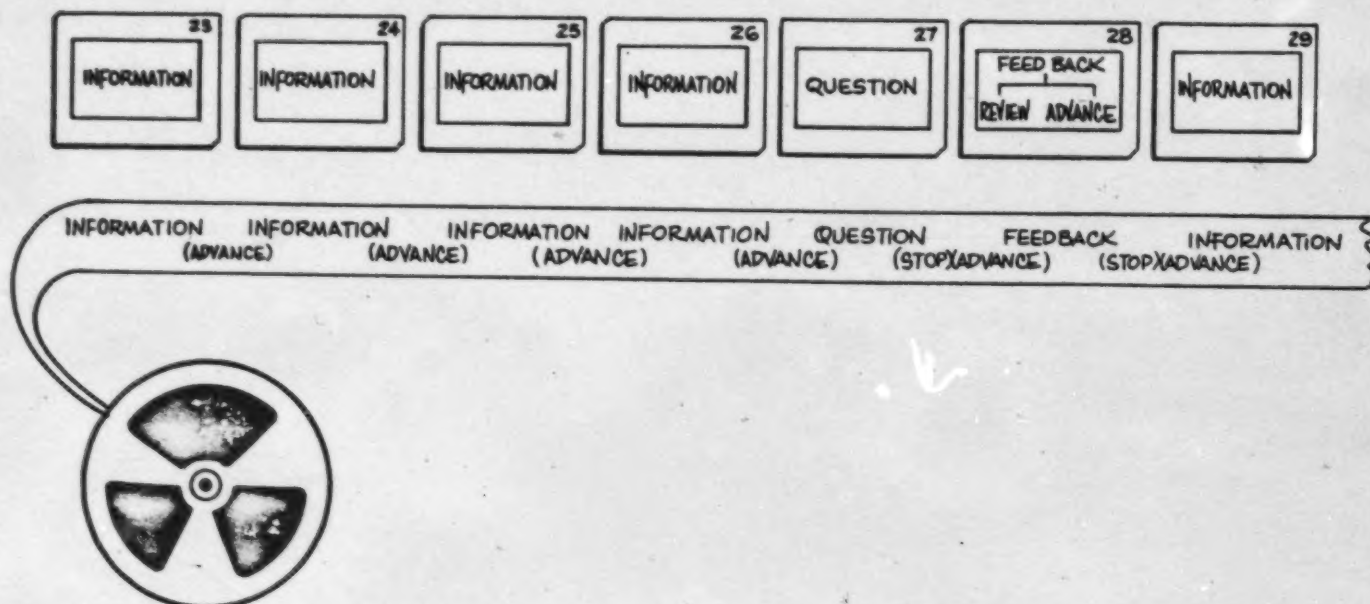


Figure 4. Format of sound-slide presentation format.

One remaining problem was to locate an audio playback unit that would be capable of reversing the slides while keeping the audio tract in synchronization. It was felt that this function was crucial to the success of the supplemental presentations since a strictly linear type of program with no review capabilities was inconsistent with the philosophy and goals of the project. At the time this decision was being made, the only available audio playback unit with review capabilities was manufactured by Telex Corporation of Minneapolis, Minnesota. Consequently all supplemental materials were developed around the capabilities of this machine.

An additional piece of equipment, a sophisticated slide production system, was purchased to add professional quality to the thousands of technical slides that are being developed.

These questions and problems having been resolved, a second workshop was organized in June of 1974, to train the twenty institutional instructors in the techniques of writing scripts for the supplemental sound-slide presentations. Each instructor was asked to pick one of the problem areas identified in the walk-through to develop an objective for a sound-slide presentation and to write a complete script. As in the modules, the material presented in the sound-slide presentations was introduced in small steps followed by a practice problem with immediate feedback.

Following the workshop, instructors were contracted to continue the script development. As with the modules, they were once again responsible for one edit of their scripts following a consultant's review. Remuneration was based on the recorded time of the script. A general rule of thumb was established to hold the length of each script to no more than twenty minutes; however, the principal criteria for length is the amount of explanation required to completely cover an objective.

As of mid-August, more than one hundred sound-slide presentations were in various stages of development. The overall goal of the project staff is to complete at least two hundred slide presentations before the termination of the project.

PROJECT EVALUATION

Simultaneously with sound-slide presentation and module development, the project staff is actively engaged in a complete evaluation of all the instructional material. To fulfill this objective, a Research Associate with a strong background in testing and measurement was hired in June 1975.

A third workshop for the consortium faculty members was held shortly after the Research Associate arrived in order to introduce the participating instructors to the evaluation plan and to develop the strategy for implementing the evaluation. A tentative listing of evaluation objectives include the following:

1. Do students learn more (or better) under the individually-paced curriculum than under conventional teaching methods?
2. An individually-paced curriculum may produce a very different grade distribution than that seen in a conventional course, as many more students may receive A's and B's in an individually-paced curriculum. Are these higher grades justified?
3. Does the "average" student in an individually-paced curriculum exhibit a significantly different long-term retention of facts and concepts than the "average" student in a lecture course?
4. Can the individually-paced curriculum materials developed by a given instructor be used in another institution with roughly equivalent results? That is, are well-written individually-paced curriculum courses relatively independent of who is the actual teacher, provided the teacher using them understands how the individually-paced curriculum works?
5. The majority of people who have taught self-paced courses have experienced the "procrastination problem" evidenced by a significant number of students who progress through the course at a rate much slower than average. What are the various causes of procrastination, and how may a course be designed to minimize the problem?
6. Connected with the fifth objective is the problem of dropouts. Self-paced courses regularly produce a higher dropout rate than other courses. Can this dropout percentage be reduced, and how?
7. What is the effect of class size? Does the quality of an individually-paced curriculum suffer as class size increases?

8. Do students under an individually-paced curriculum display a more positive affect toward subject matter than students under more conventional teaching methods?

The instructional material for each course will be tested by closely monitoring experimental and control groups. All eleven courses will be evaluated at various sites within the ten participating institutions during the three quarters of the 1975-1976 academic year.

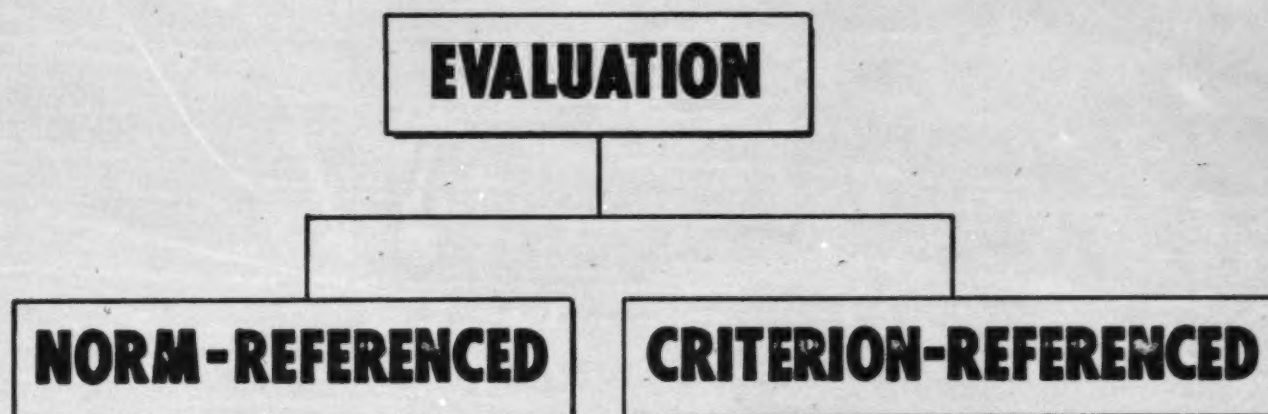


Figure 5. Evaluation emphasis.

As depicted in Figure 5, the evaluation will consist of a two-pronged approach: (1) a norm-referenced evaluation which compares the individually-paced curriculum with a lecture-based curriculum; and, (2) a criterion-referenced evaluation which determines the effectiveness of the individually-paced curriculum in respect to the pre-stated objectives.

For Further Information Contact:

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 State Board for Technical and Comprehensive Education
 Robinson Bldg., Room 121
 Lexington Avenue
 West Columbia, South Carolina 29169

COMMUNITY COLLEGE ASSOCIATION
FOR INSTRUCTION AND TECHNOLOGY

Concurrent Session, May 1

Educational Development at Greenville TEC

The Educational Development Team at Greenville TEC is funded through the Office of Education by the Fund for the Improvement of Postsecondary Education.

Dr. Jo Anne Craig wrote the introduction, "Educational Development at Greenville TEC," and the outline material used in the presentation was prepared by Mr. David Titus, Director of the Project.

EDUCATIONAL DEVELOPMENT AT GREENVILLE TEC

Greenville Technical College is an educational center borne out of the needs of industrial upper South Carolina. The College is a thriving combination of flexibility, accessibility, and affordability for the populace of the Palmetto State. One of sixteen technical colleges in the state, Greenville TEC offers over 50 programs to satisfy the varying needs of the region by providing all levels of vocational, technical, and college transfer training to all citizens who desire that education.

Originally designed to fulfill the needs of industry in the state, Greenville TEC offers educational opportunities to those desiring a high school equivalency certificate, industrial/vocational or technical training, preparation for a career in the allied health sciences, or the first two years of academic study toward a baccalaureate degree. Upgrading and updating courses, community interest programs, seminars, technical symposiums, industrial equipment exhibits, and other educational programs respond to the community demands. From welding to physical therapy, thousands of students of all ages are trained in the latest developments in their fields with the most up-to-date equipment available.

Begun in 1961, Greenville TEC has blossomed from a trailer-classroom in south Greenville to a sprawling eight-building complex with construction underway on an industrial careers complex and food service training facility. Over 10,000 students are served each week by the college.

The proliferation of students has necessitated the expansion of faculty and staff -- now numbering over 400 in both day and night division -- and the necessity for increased instructional support.

The formation of a three-person educational development team was the answer to this need for continuous instructional inspection and upgrading -- a process particularly important in the community college, where daily entry by students into most curriculum programs creates the need for individualized instruction.

Individualized instruction takes into account the diverse backgrounds and ambitions of a variety of students who enter the community college's open door. Through the efforts of the educational development team, we have the leadership and impetus for us to move as an institution from traditional, group-oriented instruction to instruction that is prescribed for each student after his learning needs have been determined.

As part of the process of individualizing instruction, the team works with instructors during workshops, seminars, and one-to-one experiences in designing and implementing competency-based instruction. Instructors select or design alternative learning modes, and improve the evaluation of both teaching and learning.

The team offers on-the-spot relief to faculty desiring audio-visual equipment for classroom use, aids faculty in devising slide presentations to emphasize key factors in a course, and offers an invaluable source of expertise essential for confidence in teaching.

Pre-service programs in the fall offer the faculty a chance to evaluate their curriculum before plunging into the school year. Visiting consultants during the term boost instructors with fresh, innovative ideas and help them cope with especially stubborn instructional problems.

Faculty members may solicit the help of a development team member who will audit a particular class in an effort to improve its instructional content or presentation. With the enthusiasm, expertise, and imagination offered by the three development team specialists, teachers have begun to shape their instruction around behavioral objectives or goals to which students climb.

This objective process involves making students aware of what is specifically expected of them, designing tests accordingly, and finally identifying expected entrance and exit performances expected of students.

Student input plays a major part in the curriculum upgrading process. Instructors are encouraged to develop alternative learning modes, and as a by product students are motivated to participate more in the learning process.

The immediate results include: marketing students video-tape their sales presentations, then critique and rehearse them until they have mastered the perfect sales pitch -- operating room nurses experiment with ways of arranging surgical instruments -- and architectural students move through learning activity packages at their own pace.

These efforts at innovative learning represent not only the change in the instructional process itself, but an acute metamorphosis in the attitudes of faculty. The willingness to try new ideas and new techniques is contagious among faculty and is transmitted to other faculty and students. As a consequence, the entire learning process moves forward.

At times, methods for instructional improvement unconnected with media are suggested. Small group discussions, inquiry and student presentations are among the alternatives some instructors are now considering.

Having completed these initial steps, the team and instructors look at evaluation and testing. Objectives and test items should agree and they often do not. The team tries to help rewrite test items to more nearly match course objectives. At time, the objective may need to be reexamined. The maxim at Greenville TEC is "Don't write objectives, rewrite them."

When these activities are viewed in their entirety, it appears that the greatest value of the Educational Development Team is in its ability to facilitate change and improve "curriculum communication." As a result of this newfound communication, students, instructors, and administrators are developing a systematic approach to instruction, and thereby experiencing a keener awareness of the learning process. The rewards of the warm reception that change has received at Greenville TEC are ongoing. One thing is sure -- everybody wins, especially the student.

FUNDING

FIPSE GRANT FUND FOR THE IMPROVEMENT OF POST-
SECONDARY EDUCATION

INITIAL FUNDING

. JULY 1, 1974	49,000
. JULY 1, 1975	53,000
. JULY 1, 1976	55,000

2 FULL TIME STAFF

CONSULTANTS

1 SECRETARY

TRAVEL

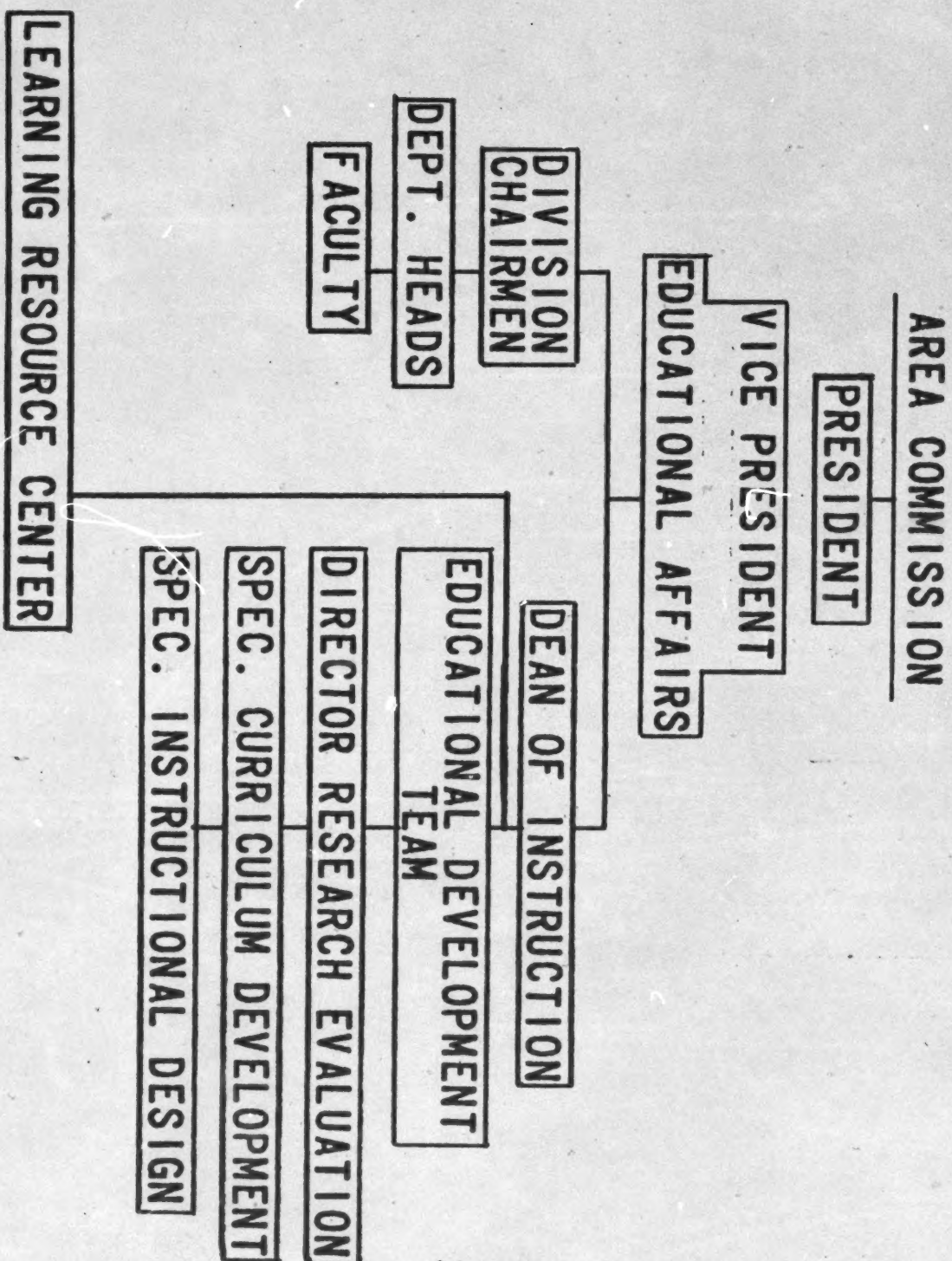
1 GRAPHIC ARTIST

SUPPLIES

1 PHOTOGRAPHIC TEC.

EQUIPMENT RENTAL

1 FULL TIME STAFF MEMBER SUPPLIED BY THE COLLEGE



GOALS AND OBJECTIVES

- CONVERT ALL COURSES TO COMPETENCY-BASED INSTRUCTION THROUGH UTILIZATION OF BEHAVIORAL PERFORMANCE OBJECTIVES

1. CHANGED ABOVE TO READ 100 COURSES OVER A THREE YEAR PERIOD IN FEBRUARY 1975
2. DEVELOP ALTERNATE LEARNING MODES FOR OBJECTIVES
3. EMPLOY GENERAL MASTERY LEARNING CONCEPTS FOR COMPETENCY-BASED COURSES
4. INDIVIDUALIZE COURSES TO EXTENT POSSIBLE
5. REVIEW AND IMPROVE CLASSROOM TESTS
6. VALIDATE MATERIALS AND PROCEDURES DEVELOPED
7. ASSESS THE INSTRUCTIONAL PROCESS
8. IMPROVE TEACHER COMPETENCY

ACTIVITIES

1. PRE-SERVICE FOR FULL, PART-TIME AND NEW FACULTY
2. IN-SERVICE FOR FULL-TIME FACULTY DURING YEAR
3. INTENSIVE IN-SERVICE FOR 40-50 FACULTY THROUGH GRADUATE AND UNDERGRADUATE COURSES TAUGHT ON CAMPUS. INCLUDES INDIVIDUAL WEEKLY MEETINGS OF FACULTY INVOLVED WITH EDUCATIONAL DEVELOPMENT TEAM
4. INSERVICE WITH DEPT. REQUESTING INFORMATION ON COMPETENCY-BASED EDUCATION
5. SEARCH FOR INFORMATION AND MATERIALS APPLICABLE TO COMPETENCY-BASED INSTRUCTION, MASTERY LEARNING AND INDIVIDUALIZED INSTRUCTION
6. WHERE APPLICABLE TO INSTRUCTIONAL IMPROVEMENT INVESTIGATE SOURCES AND WRITE PROPOSALS FOR ADDITIONAL FINANCIAL RESOURCES

7. COLLECT INPUT FROM ADMINISTRATION, FACULTY, STUDENTS AND OUTSIDE EVALUATOR FOR IMPROVEMENT OF INSTRUCTION
8. ASSIST FACULTY IN THE DEVELOPMENT AND PROCUREMENT OF MEDIA FOR COURSES
9. CONDUCT ONE DAY SEMINARS BETWEEN QUARTERS FOR DEPT. HEADS FOR THE PURPOSE OF WRITING COURSE SYLLABI AND BEHAVIORAL OBJECTIVES
10. CONDUCT WORKSHOPS IN THE USE AND IMPORTANCE OF DATA ANALYSIS SYSTEM FOR FULL AND PART-TIME FACULTY

EVALUATION

1. TECHNIQUES THAT E D T MIGHT USE TO ATTRACT ADDITIONAL VOLUNTEERS
2. IMPLICATIONS FOR MANAGEMENT SYSTEM DESIGNED TO INSURE POSITIVE AND REINFORCING RESPONSES BY THE E D T TO ADDITIONAL STAFF VOLUNTEERS
3. IMPLICATIONS FOR INSTITUTIONAL DEVELOPMENT OF REWARD STRUCTURES FOR SUCCESSFULLY COMPLETED STAFF DEVELOPMENT ACTIVITIES

COMMUNITY COLLEGE ASSOCIATION
FOR INSTRUCTION AND TECHNOLOGY

Final Report

The Final Report on the Conference was submitted by Dr. Craig to
Dr. Richard Decker, CCAIT President, Cuyahoga Community College, Ohio.

CCAIT Conference on Instructional Change Strategies

Final Report

The CCAIT Conference on Instructional Change Strategies was held April 30 and May 1. The Conference was hosted by Greenville Technical College in Greenville, South Carolina and coordinated by Dr. Jo Anne Craig.

Fifty-seven individuals attended the conference. Although a majority of the participants were from South Carolina, the states of Nebraska, West Virginia and Florida were among those represented.

The Conference program (which is attached) indicates the discussion sections were led by South Carolina CCAIT members and participants in instructional programs in South Carolina. One evaluation form justifiably criticized the program for its focus on the activities in one state.

The financial statement attached indicates the conference profits as nearing \$300. The exact amount is being forwarded to Mr. William Belmore, CCAIT treasurer. All accounts have been paid in full as of this date.

The Conference was to have been held at the Thunderbird Motor Lodge in Greenville. The dining rooms and public facilities of the motel burned several hours following the Friday dinner. It was necessary to totally rearrange the Conference in the early hours of May 1. Transportation was arranged and meetings scheduled on the Greenville TEC campus. A local caterer prepared lunch for the nearly sixty people on two hours notice. Participants displayed much good sportsmanship and comraderie during all of the shifting.

Conference evaluation forms (attached) were complimentary. Positive aspects which were emphasized included:

Conference informality
Exchange of ideas with others in field
Gaming workshops
Choice of meetings

After reviewing the evaluation forms, the suggestions for improvement are:

1. An officer of CCAIT should attend. This was brought up by a registrant and it was embarrassing that not one officer had come.
2. The conference should be sponsored by more than one school (preferably in different states). This would provide more ideas and resources for conference sessions.
3. The conference time should be extended to a two or three day meeting. Travel expenses are so high that a multiple day conference would more easily justify costs.

Progress Report

February 9, 1976

GREENVILLE TECHNICAL COLLEGE has completed another successful, eventful year and has embarked on 1976 which promises to be the best year yet, in growth, in service, and in change.

We are pleased to make this progress report to you who have given this institution your support, thus making this progress possible.

GREENVILLE TEC continues to serve the needs of people and business and industry through the addition or revision of programs, as the need is indicated through surveys and on the advice of more than 500 advisory committee members. Examples of these changes are:

The TEXTILE MANAGEMENT curriculum has been revamped to place more emphasis on supervisory and managerial skills to meet the requirements of the rapidly changing textile industry. Making recommendations and monitoring their implementation is a committee of dynamic leaders representing leading textile corporations in this area.

A MANAGEMENT SCIENCE curriculum is meeting the challenge of successful supervisory and management development, applicable to all phases of job training.

The TRANSPORTATION DIVISION has been restructured to bring about an improved approach to providing trained personnel in that segment of the economy.

An EDUCATIONAL DEVELOPMENT TEAM, made possible with HEW funds for the Improvement of Post-Secondary Education, is making great strides in maintaining and improving the high quality of instruction. Eighty percent of the faculty is participating in this project, led by three team members who serve as a catalyst to inform the faculty of methodologies. The model developed at GREENVILLE TEC is becoming a model for technical institutions across the country as they become comprehensive learning centers.

GREENVILLE TEC'S ENROLLMENT, according to a report from the State Board for Technical and Comprehensive Education, reached a total of 10,407 for the Fall quarter which ended in December, 1975. A total of 21,240 students were enrolled during the academic year 1974-75 in all programs day, night, and weekends at locations both on and off campus.

PHYSICAL EXPANSION during the past year has included the following:

The new 20,000 square foot NURSING EDUCATION BUILDING was dedicated in 1975.

Construction began on the four-building INDUSTRIAL CAREERS COMPLEX, comprising close to 100,000 square feet of training space. This facility will be occupied in Spring, 1976.

Ground was broken today and construction will begin immediately on the FOOD SERVICE TRAINING CENTER. This 24,000 square foot facility, funded at a cost of \$900,000 through the U. S. Department of Health, Education and

Welfare and the Appalachian Regional Commission, will enable GREENVILLE TEC to train personnel for this fast growing industry in UPSTATE SOUTH CAROLINA.

The FIVE-YEAR PLAN FOR CAPITAL IMPROVEMENT includes the following buildings, as GREENVILLE TEC moves toward total development:

- a MULTIPURPOSE CLASSROOM BUILDING (\$1 million)
- a CRIMINAL JUSTICE BUILDING (\$1.5 million)
- a BUSINESS and PUBLIC SERVICE BUILDING (\$1 million)
- a LEARNING RESOURCE BUILDING (\$1.2 million)

State bond money in the amount of \$1.25 million was approved by the South Carolina legislature in 1975 for a STUDENT CENTER, the first capital improvement money ever granted GREENVILLE TEC by the State. Due to the freeze on state bond money, these monies have not been received. However, we are optimistic that removal of the freeze will make the funds available in the near future, so that plans for this urgently needed project can proceed.

FEDERAL AND COUNTY FUNDS

have included a total of \$2.5 million in federal funds in the past year, most of which was allocated through the Appalachian Council of Governments. In addition to four mills for operational funds (approximately \$600,000 annually) previously allocated to GREENVILLE TEC from GREENVILLE COUNTY, 1.5 mills for capital improvement (approximately \$250,000 annually) was recently allocated for a two-year period. These funds will be used to match federal funds as they are available.

GREENVILLE TECHNICAL COLLEGE is committed to the continuation of the development of an institution that will adequately serve the community's needs, offering equal opportunity for high quality education to all who seek it. This commitment, combined with continued community support, will make this development a reality.

Greenville Technical College

P. O. BOX 5616, STA. 8

GREENVILLE, SOUTH CAROLINA 29607



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*Greenville
Technical College*

UNIVERSITY OF CALIF.
LOS ANGELES

JUN 25 1976

CLEARINGHOUSE FOR
JUNIOR COLLEGES